Academic Advice Service

UNIVERSITY OF PASSAU

Faculty of Computer Science and Mathematics

M.Sc. Artificial Intelligence Engineering

Programme webpage

Digital infosheet

This infosheet applies to students who started their programme in or after October 2021.

Last revised in March 2025.

About the programme, entry requirements and how to apply

Basic facts about the programme

Degree awarded: Master of Science (M.Sc.)
Programme start: October (winter semester) and April (summer semester)
Language of instruction: The entire programme is taught in English.

Programme description

Artificial intelligence (AI) now permeates all areas of our lives and holds enormous potential for the future. Mathematics and computer science provide the foundations for understanding and developing core AI technologies.

In the Master of Science programme in Artificial Intelligence Engineering (AI Engineering) you will deal with scientific theories, algorithms and methods for designing and developing AI-based systems. You will also acquire the ability to integrate artificial intelligence into existing real-world systems (e.g. media systems, information systems, industrial processes) or to develop these yourself.

In addition, you will study artificial intelligence from the perspective of other academic disciplines, as the widespread use of AI-based systems raises not only technical but also legal, ethical, social and economic questions.

Programme syllabus

The M.Sc. Artificial Intelligence Engineering programme is divided into the **compulsory module area** and **compulsory elective module areas**.

In the **compulsory area** you will attend the Introduction to AI Engineering lecture (with accompanying exercise course) as well as an AI Engineering seminar. You will also write your **master's thesis** in this area.

Compulsory elective modules

The compulsory elective area is divided into the following six module groups:

1. Algorithm Engineering and Mathematical Modelling

You will study the construction of deterministic and stochastic algorithms, their implementation, evaluation and optimisation as well as the modelling and complexity analysis of discrete and continuous problems using mathematical methods. In addition, you will acquire fundamental knowledge of mathematical logic, stochastics, functional analysis and discrete mathematics to enable a deeper algorithmic mathematical understanding of AI-based systems.

2. Artificial Intelligence Methods

You will examine methods and algorithms of symbolic and sub-symbolic artificial intelligence and machine learning (e.g. reinforcement learning, knowledge representation and deduction systems). Furthermore, you will study underlying theories of learning systems and the application of algorithmic and mathematical principles for the realisation of artificial intelligence.

3. Artificial Intelligence Systems Engineering

You will learn methods and structured process models for the development of AI-based systems. In particular, these include testing and evaluation strategies (e.g. generative adversarial testing or simulation), data and knowledge modelling methods, methods and systems for operationalising AI-based systems and the evaluation of properties such as security, traceability, reliability, explicability and transparency.

4. Artificial Intelligence Applications

You will gain insight into different application areas and possibilities of artificial intelligence, such as speech, text and media analysis, business information systems or energy informatics. Also covered are the specific characteristics of the application domains and their influence on the selection of AI methods and the development of AI-based systems.

5. Cross-Cutting Concerns

You will learn about the legal, ethical, social and economic considerations involved in using AI-based systems and reflect on the societal impact of AI. Language courses and writing workshops, soft-skills seminars and practical courses will complement your academic studies and prepare you for your professional life.

6. Research Seminars

You will learn to familiarise yourself independently with the current state of research in the AI Engineering field, collate this information and deliver oral presentations. You will acquire in-depth knowledge of research work in the field of artificial intelligence and get the preparation for a future research role.

Career prospects

The demand for AI competencies in the labour market is increasing significantly. With a master's degree in Artificial Intelligence Engineering, you are able to work independently or take on executive positions and challenging jobs in the private and public sectors or academia. This degree opens up outstanding career opportunities in a wide range of industries, such as:

- systems development and data analysis in the area of digital media
- software engineering and IT systems development
- data analysis in the financial and service sectors
- development of AI-based solutions in the transport and mobility sector
- control of industrial plants; Industry 4.0
- the medical and pharmaceutical industries as well as life sciences
- insurance companies and banks

Finally, the degree opens up an academic career path if you continue studying for a doctorate in artificial intelligence development.

Entry requirements

You are eligible for this degree programme if the following applies to you:

You have an **undergraduate university degree** (bachelor's degree, *Magister, Diplom,* state examination or equivalent) **in computer science or mathematics** with a **computer science/mathematics component of at least 120 ECTS credits.** Out of these 120 ECTS credits:

- at least **35 ECTS credits** must have been earned in **mathematics modules/courses, including theoretical computer science**
- at least **40 ECTS credits** must have been earned in **computer science modules/courses**

(If you completed a **four-year non-ECTS degree,** the 120 ECTS credit requirement is deemed to be met if two-thirds of your credit points were earned in computer science/mathematics-related modules/courses.)

Your degree must have been earned over a course of study of a standard length of **three years or more.** The **final grade for your first degree** must be **2.7** or better under the **German marking system**, or the relevant equivalent final grade in a foreign marking system.

If your final grade is not 2.7 (or the equivalent foreign grade) or better, **you may still apply if you can prove that you ranked among the best 70%** of graduates within your particular degree programme in the academic year in which your final certificate was issued (i.e. your cohort). In that case, you should provide an **official certificate** from your university registrar specifying the **total number of graduates** of your cohort as well as, **importantly, the rank number/percentile** you attained on the basis of your final grade.

As part of the application you must submit an **English or German-language abstract/summary of your undergraduate dissertation/bachelor's thesis/final year project.** If you did not write a dissertation/thesis as a formal part of your prior degree programme, you may instead submit an **academic research paper or publication** that demonstrates your ability to solve a scientific research problem independently.

Unless **English** was the language of instruction for your prior university education, you should provide a language certificate at level **B2** of the Common European Framework of Reference for Languages (CEFR), such as:

- TOEFL (567 paper-based, 87 internet-based, ITP 543 “silver” or better)
- IELTS (score 5.5)
- Cambridge English Language Assessment at level “Advanced” (CAE) or “Proficiency” (CPE)
- or an equivalent English language certificate. **A first degree or secondary education completed exclusively in English** also counts as proof of English-language proficiency.

To facilitate living in Germany, you should ideally also have **German language skills at level A1 CEFR** (beginner’s level) or higher. If you cannot provide a certificate but meet all other requirements, you will still be admitted to the programme; however, you will be required to complete a compulsory beginner’s German course during the first year of study in addition to your regular modules.

If you cannot provide your final bachelor’s (or equivalent) university degree certificate and transcript/final student record at the time of application or enrolment, you may submit a written request to the Board of Examiners asking for an extension of the submission deadline by which you have to submit your first degree certificate and outlining the reasons why you are unable to provide them at the current time. The Board of Examiners will grant you a deadline up to no later than the **tenth week** of lectures of the first semester. For this to be approved, you must have already completed all coursework and assessments for your first degree at the beginning of the degree programme at the University of Passau and have submitted a (preliminary) transcript showing a (preliminary) grade of 2.7 or an equivalent foreign grade.

How to apply

For information on how to apply, please visit www.uni-passau.de/en/apply, answer the questions and then follow the link. You will be directed to a page **listing which documents are required for your application and how to start the application process.**

The **application deadlines** for this degree programme are:

- **15 December** for the **April** starting date **(summer semester),**
- **31 May** for the **October** starting date **(winter semester).**

Your application must be **received** by these strict cut-off deadlines to be considered.

If you have any questions on the application and selection process, please contact the Student Registration Office, Innstrasse 41, 94032 Passau, Germany, phone +49 851 509 1127, registry@uni-passau.de.

At the start of the degree programme

Orientation Week of the Faculty of Computer Science and Mathematics (FIM)

The FIM Orientation Week (“O-Woche”) programme comprises:

- **study tips from the FS Info student committee** and the IEEE student society
- practical introduction to the FIM’s IT services in a computer introduction session [German page]
- familiarising you with the campus
- guided tours of the library
- various courses and fun activities where you can get to know your fellow students

New students are strongly encouraged to make use of these orientation offers [German page].

The general O-Woche programme of the University of Passau includes information events, for instance, on how to use the Stud.IP virtual learning environment as well as the University’s computing facilities.

International Students' Orientation Weeks

International students starting out at the University are invited to participate in the special orientation weeks for international students organised by the International Office. Starting a number of weeks before the official beginning of the semester they include **English-language guided tours of the town, campus and university facilities** as well as short-term **German language and area studies courses** – and usually one or two **outings to famous places in Germany.** As the International Students' Orientation Weeks coincide with the regular Orientation Week, new students coming to Passau will be able to take part in both.

Foreign language training and German courses

While you are studying your degree programme, you can learn a language by taking courses offered by the University's Language Centre, e.g. as part of the **"Cross-Cutting Concerns"** module group or if you need to obtain your **A1 certificate in German** during the first year. German as a Foreign Language is only available to international students. Language courses are offered **free of charge to enrolled students** and all languages with the exception of English can be started without any prior language skills on the part of the student.

If you do have existing language skills in your chosen foreign language, you are required to take a placement test, the results of which determine the level at which you will join the language course. **Many placement tests are conducted online as C-Tests**. If no placement tests are carried out for your chosen language, please arrange an interview appointment with the relevant language lecturer well in advance of the start of the language course.

Course catalogue, Stud.IP and the Campus Portal

Even before enrolment, you can check the course catalogue to see which specific courses (lectures, seminars, exercise classes, etc.) are offered in your degree programme.

Your **ZIM username and password** (in German: "ZIM-Kennung"), which you need to **sign in to the IT systems** (including Stud.IP and the Campus Portal), will be sent to you once you have completed enrolment.

- To **find and register for your courses**, first log in to Stud.IP[1]. Click on "Search" (the looking-glass symbol), then *"Course directory", "Courses of study", "Master" and* then "Master Artificial Intelligence Engineering (Version WS 2021) (Master)". This will take you to an overview of the module areas, modules and individual module courses for your degree programme. In addition to this, Stud.IP also gives you access to module-related content, timetable functions as well as updates on the module sessions and allows you to engage with lecturers and fellow students via the notice boards. Finally, Stud.IP is used for managing the various functions of your **CampusCard** (student ID card).

  The **Campus Portal**, another virtual learning environment (VLE) system, is the platform students use to register for **module and language examinations**. It is important to remember that even after you sign up for a lecture, seminar, tutorial etc., you have to sign up separately for the exams in the exam registration period announced during the semester.

  During the Orientation Week and on the ZIM website you will be given an introduction to the IT systems of the University of Passau by the Centre for Information Technology and Media Services (ZIM).

Academic calendar

Check the academic calendar for teaching dates and other important dates during the semester. Please note that the "**semester break**" is the part of each semester during which there is no teaching; however, for administrative purposes the semester break still counts as being within the respective semester. Most **module examinations** take place during the first weeks of the semester break. In many degree programmes, students also have to complete written assignments and internships during the semester break.

[1] Once you are logged in to Stud.IP, you can change the display setting to English. To do so, click on your profile picture (upper right-hand corner of the screen), select "Einstellungen" and under "Sprache" – which is set to "Deutsch" by default, choose "English", then click on the "Speichern" button.

Programme structure and course credits

Modular structure and European Credit Transfer and Accumulation System (ECTS)

The programme is divided into modules. A module is a complete unit of study and consists of one or more courses (i.e. lectures, seminars or tutorials) on the same or a closely related topic. Every module has a specific ECTS credit value (aka ECTS load) which reflects the time students are expected to spend on coursework (including both teaching contact hours in class and self-study at home or in the library) if they are to successfully complete the module. A rule of thumb is that one ECTS credit amounts to a student workload of roughly 30 hours, including class attendance and self-study.

You should try to attend all classes for the respective course. Assessments will take the form of written examinations, written assignments, colloquiums, oral presentations, written reports or other assessment formats. Most modules conclude with a written or oral examination, for which you will receive a mark. When you pass the examination, you are awarded the full ECTS credit value of the module.

In order to complete your programme within the standard period of study, you should aim to obtain **approximately 30 ECTS credits every semester**, since the programme amounts to 120 ECTS credits overall.

Module areas and final grade

This degree programme comprises a minimum of 120 ECTS credits, of which 90 are awarded for taught modules, and the remaining 30 ECTS credits for the master's thesis and its presentation. The M.Sc. AI Engineering programme is divided into **compulsory and compulsory elective module areas**. See the appendix of this information sheet for the **programme structure.**

Upon successful completion of the master's examination, a final grade for the programme is determined on the basis of the marks awarded for all graded modules and the mark awarded for the master's thesis; the final grade is calculated from the average weighted by ECTS credit values.

Award requirements

To successfully complete the programme, you have to earn 13 ECTS credits in the core modules and for the thesis presentation; furthermore, you are required to achieve a pass mark on your thesis, for which you will gain 27 ECTS credits. Finally, you must accumulate a minimum of 80 ECTS credits from compulsory elective modules.

Out of these 80 ECTS credits from the compulsory elective modules:

In the **elective module groups** 1) "Algorithm Engineering and Mathematical Modelling", 2) "Artificial Intelligence Methods", 3) "Artificial Intelligence Systems Engineering", 4) "Artificial Intelligence Applications" and 5) "Cross-Cutting Concerns" you will complete modules amounting to a minimum of **70 ECTS credits**, distributed as follows:

a) **At least 55 ECTS credits** must stem from the elective module groups 1, 2, 3 and 4, whereby a minimum of **10 ECTS credits** must be gained in **each** of the module groups 2, 3 and 4.

b) **At least 5 ECTS credits** must come from elective module group 5.

You will complete modules worth up to **10 ECTS credits** in **elective module group 6** "**Research Seminars**".

To pass your **master's thesis**, you need to achieve a mark of 4.0 or better. To be awarded the degree, you must acquire an overall 120 ECTS credits.

At the end of the degree programme, you should send a written request for your degree documents (i.e. the final transcript, degree certificate etc.) to the Examinations Office. If you have completed more modules than are required to achieve the overall 120 ECTS credits, you must inform the Examinations Office which modules are to count towards your final grade.

Master's thesis

When writing your thesis, you will demonstrate your ability to independently carry out academic research by applying scientific methods to a defined subject matter.

Prior to commencing the thesis, you will have to accumulate a minimum of 40 ECTS credits in this degree programme.

You will be given **six months** to write the thesis, which should be written in German or English. Once you achieve a pass mark on your thesis, you are awarded **27 ECTS credits** for it.

You may re-attempt a failed master's thesis once; however, you must do this with a new topic.

Study abroad

Even if studying abroad is not obligatory in this degree programme, you can still spend a semester or more at one of our many partner universities throughout the world.

Voluntary completion of additional modules

In addition to the modules required for the degree programme, you may complete assessments in other modules not required for the degree. A separate transcript will be issued for the marks attained in these additional modules; however, these do not count towards the final grade of your degree. If you wish to attend individual courses from other degree programmes, you have to register directly with the relevant lecturer/module convenor. You will then receive a certificate of attendance, but it will not be listed in your regular transcripts.

Moreover, you can acquire various additional qualifications and certificates and all students enrolled at Bavarian universities can take advantage of the virtual course offering of the **Bavarian Virtual University** *(Virtuelle Hochschule Bayern,* www.vhb.org).

Key competencies and career planning

With the so-called ZKK courses (ZKK stands for the Future: Career and Competencies Section), the University of Passau offers you a comprehensive range of free transferable skills seminars. In the compact seminars and IT courses, you will acquire important interdisciplinary qualifications to complement your degree studies.

ZKK also offers a wide range of **careers and internship advice services** that make it easier for you to start your career later on. Check out our jobs board for information on internships and permanent positions. In addition, through ZKK you can apply for scholarships for conducting internships in a foreign country. Towards the end of your studies, ZKK supports you with special job application seminars and information on starting a career in Germany and abroad.

Doctoral study

This master's programme enables you to work according to scientific principles and thus gives you the prerequisites for doctoral study. When undertaking a doctoral project, you should ideally have already done research in the field of your future doctoral topic in your master's thesis. If you are considering studying for a doctorate, you should tell your master's thesis supervisor. The University of Passau offers excellent conditions for pursuing a scientific research project within the framework of a doctorate.

Important examination-related rules and regulations

Regulations and module catalogue

- The general study and examination regulation (AStuPO) for the faculty's master's programmes and the subject-specific study and examination regulation (FStuPO) for the degree programme jointly set out the required assessments and examination modalities for successful completion of the programme.
- The module catalogue provides detailed module descriptors, including the required assessments.

Programme duration and ECTS credits

Standard period of study: four semesters' full-time study, not counting semesters on leave.

Maximum period of study: six semesters. If you have not completed all required modules (i.e. passed all required module examinations) by the end of the sixth semester, the master's examination is deemed to have been failed for the first time; you will be given further two semesters to complete the missing modules.

If you have not passed all required modules by the end of the eighth semester, you will fail the programme without the possibility of re-sitting the examinations. It is important to understand that this *"endgültig nicht bestanden"* status, which means "final fail", also bars you from enrolling in the same degree programme at other German universities.

Exceeding the deadline after the first or second semester

You have to acquire at least **20 ECTS credits** by the end of the **first** semester. If this requirement is *not* met, you must gain at least **30 ECTS credits** by the end of the **second** semester. If this requirement is not met, you will be de-registered from the programme and lose your right to take the final examination.

Guidance interview

During your first year on the programme, you are entitled to a **guidance interview** with a module convenor – a professor who is in charge of one of your modules.

Resits

You may resit failed module examinations up to **two times**; however, you cannot resit an exam that you have previously passed for mark improvement. Resits must take place within one year of failing the module. This resit deadline is not affected by any semesters on leave of absence or termination of enrolment.

Cheating in examinations; plagiarism (see § 13(3) AStuPO)

If you attempt to influence the result of an assessment by **cheating** (e.g. plagiarism or use of unauthorised examination aids), the assessment in question is assigned a mark of 5.0 ("insufficient", *"nicht ausreichend")* or "fail" *("nicht bestanden").*[2]

Plagiarism occurs when someone violates the intellectual property of others by making unauthorised use of their **copyrighted work**, either intentionally or by acting with gross negligence. Specifically, you commit plagiarism if you present someone else's work (e.g. scientific findings, hypotheses, theories or research approaches) as your own.

It is important that you familiarise yourself with the **citation style** used in your academic discipline. If you are unsure about something or have specific questions, please contact the lecturer of the respective course or your master's thesis supervisor.

[2] In written examinations, if an invigilator finds any objects on or near the candidate's desk that are not expressly permitted as examination aids, this is considered attempted cheating. (The Examinations Office announces the permitted exam aids on this page in the run-up to the exam periods.) The Board of Examiners will permanently revoke a student's right to sit the master's examination of the M.Sc. Artificial Intelligence Engineering programme if the student was found to have cheated or attempted to cheat repeatedly during his/her studies and it considers the severity of the transgression to be of a level that warrants this step.

When submitting your written work, you also have to enclose the following:

- A declaration of own work stating that the written work was written independently and without undue assistance, and that all aids and sources used, as well as passages reproduced from other works either verbatim or in paraphrased form, have been identified as such.
- A written declaration that you agree to the use of anti-plagiarism software by examiners when marking the thesis.

You must comply with the University's **Rules for the Ascertainment of Good Academic Practice (statute)**[3] for all written papers, such as presentations, seminar papers, master's theses, etc. Such written work should usually be submitted in electronic form.

The University Library offers courses on reference management software. For details and dates, see and, specifically for LaTex & BibTex [information in German].

Credit transfers

If you wish to apply for a credit transfer, i.e. having coursework or assessments completed elsewhere or for a different programme counted towards your current degree programme, please contact the module convenor or the Board of Examiners of the Faculty of Computer Science and Mathematics. Module convenors are listed in the module catalogue. The Credit Transfer Form can be downloaded from the website of the Examinations Office.

Illness and inability to attend examinations

If you fall ill before an exam, you must decide, before commencing the exam, whether you want to withdraw from it due to illness. You will need to provide a medical certificate. If you fall ill during an exam and have to abort it, you also have to provide a medical certificate.

In either case you must submit the completed Inability to Attend Examinations Due to Illness Form at the earliest opportunity. You should submit the form and medical certificate to the Examinations Office as described in the information sheet on inability to attend examinations.

If you fall ill for a longer period of time during the semester, it may be expedient for you to take leave of absence for the whole semester. If that is the case, please seek advice from the Student Registration Office and the Advice Centre for Students with Disabilities and Chronic Illnesses.

Academic adjustments/exam access arrangements

If you have a disability or suffer from a chronic or psychological illness, you may be able to apply for academic adjustments, including access arrangements (e.g. extra time for written exams). The Advice Centre for Students with Disabilities and Chronic Illnesses will be happy to advise and support you with your application.

Examinations and credit transfers

The Examinations Office has overall responsibility for all examinations-related matters, including credit transfers. It also issues your final examination certificate upon request.

Your contact for enquiries on exam-related questions for this programme is:

Ms Elisabeth Steiger
Examinations Office 1
Innstrasse 41, 94032 Passau
Phone: +49 851 509 1191
elisabeth.steiger@uni-passau.de

[3] German text: www.uni-passau.de/fileadmin/dokumente/beschaeftigte/Rechtsvorschriften/sonstige_Vorschriften/Satzung_wissenschaftliches_Fehlverhalten.pdf

Accommodation, student finance and support

Accommodation in Passau

The Student Services Association (Studentenwerk) runs four student halls of residence in Passau. In addition to these state-run student residences, there are other residential complexes operated by the Church or private organisations. Finally, the private housing market offers many flats (apartments), which can be rented by students, often as shared flats. For details on the accommodation available in Passau, visit our housing webpage.

Once you have validated your CampusCard, it also serves as a semester bus pass, allowing you to use the buses in Passau around the clock. Buses are a convenient way to travel to and from the University, particularly if your flat is located in a district that is further away from the town centre.

If you are an international student and wish to **arrange accommodation for the first semester** through the University, please contact Ms Alexandra Winterkorn of the International Office:

International Office
Room 106, Administration building
Innstrasse 41, 94032 Passau
E-mail: alexandra.winterkorn@uni-passau.de
Phone: +49 851 509 1161
Fax: +49 851 509 1164

If you need temporary accommodation for the first days or weeks after your arrival, the tourist information office provides details about **hotels, B&Bs and guest houses:**

Tourist Information Passau
Rathausplatz 3, 94032 Passau
Phone: +49 851 955980
E-mail: tourist-info@passau.de
https://tourism.passau.de/

Student loans and grants (BAföG)

If you would like to receive financial support in accordance with the federal training assistance act *(Bundesausbildungsförderungsgesetz; BAföG),* you should submit your application in good time before the start of the semester.

Scholarships

There is a range of scholarships available to students, such as the *Deutschlandstipendium* scholarship (which is equally available to foreign nationals, despite the potentially misleading name). Make sure you find out early on about the various funding opportunities available to you.

Key contacts at the University of Passau

Programme Adviser

Please contact the programme convenor if you have in-depth questions, particularly if you are at an advanced stage of the programme:

Professor Steffen Herbold
Room HK30 227, Dr.-Hans-Kapfinger-Strasse 30, 94032 Passau
Phone: +49 851 509 4610
E-mail: Steffen.Herbold@uni-passau.de

Academic Advice Service

The Academic Advice Service staff provide general advice on all degree programmes and on questions that may arise during your studies. Please make an appointment if you wish to talk to us in person, by telephone or online.

Academic Advice Service, Innstr. 41, 94032 Passau
Drop-in hours: Wednesdays 9:00–12:00
Phone: +49 851 509 1154
E-mail: advice@uni-passau.de

International Student Assistants

International students at the Faculty of Computer Science and Mathematics receive support from the **International Student Assistants** (master-help@fim.uni-passau.de). You can turn to them if you encounter any problems related to your studies at the University or life in Passau.

iStudi Coach: job-market coaching for international students

The University's iStudi Coach offers specific advice to international degree-seeking students enrolled at the University of Passau. This service is specifically targeted at international students – which is what the "iStudi" stands for – and helps you with all your **questions regarding your studies, career orientation and everyday life** in Passau. The **"iStudi Pass" programme** helps you to prepare for entering the job market in and around Passau. To be able to answer your questions as fully as possible, the iStudi Coach works together closely with the Academic Advice Service, the Future: Careers and Competencies Section and the International Office as well as a network of partners within and outside the University.

Student Services Association (Studentenwerk Niederbayern/Oberpfalz)

The Student Services Association runs the refectory, cafeterias and student halls of residence, provides student welfare advice and facilitates involvement in cultural projects, e.g. theatre, film, photography, art, dance and music. Student Services Association staff also offer advice on social and financial matters.

Further advice services at the University of Passau

You can find overview of all advice services at the University on our website.

Student societies related to the programme

Student committee (FS Info)

The student committee ("Fachschaft") of the Faculty of Computer Science and Mathematics, FS Info, can help you with matters related to student life from a student perspective. It also represents students' interests in university policy committees and organises numerous leisure activities.

Room IM 244, Innstrasse 33
Phone: +49 851 509 3004
fsinfo@fim.uni-passau.de

IEEE Student Branch Passau

The Institute of Electrical and Electronics Engineers (IEEE), is the world's largest professional association of electrical engineers and computer scientists. IEEE organises conferences, publishes technical journals and forms committees for technical standards for hardware and software. The IEEE Student Branch Passau organises workshops by students for students and maintains links to the business community through excursions and company presentations. In addition, its information for first-semester students, lectures and professors' introductions are intended to make everyday study easier.

STRUCTURE OF THE
M.SC. ARTIFICIAL INTELLIGENCE ENGINEERING

The M.Sc. Artificial Intelligence Engineering programme is divided into **compulsory and compulsory *elective* module areas.**

Module catalogue

Compulsory modules

The compulsory area is composed by the following modules:

Compulsory Area	**ECTS credits**	**WCH***
Module “AI Engineering Seminar”	5	2
Module “Presentation of the Master’s Thesis”	3	--
Module “Lecture Introduction to AI Engineering” with accompanying exercise course	5	3
Total	**13**	**5**

The **master's thesis (27 ECTS credits)** is also part of the compulsory module area. Please turn to page 6 for details.

Compulsory elective modules

In the compulsory elective area you will earn a total of **80 ECTS credits**. These are distributed among the six module groups as follows:

Compulsory elective module group		**ECTS credits**	
1	Algorithm Engineering and Mathematical Modelling	max. 20	**Module groups 1–4:** **Minimum of 55 ECTS credits**
2	Artificial Intelligence Methods	min. 10	
3	Artificial Intelligence Systems Engineering	min. 10	
4	Artificial Intelligence Applications	min. 10	
5	Cross-Cutting Concerns	min. 5	
6	Research Seminars	max. 10	
Total		**min. 80**	

*WCH = Teaching contact hours per week (in German: *Semesterwochenstunden,* short form: SWS)